**PATENT** 

Practitioner's Docket No. 2960/112

#### IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

re application of:

Lang et al.

Application No.:

10/681,749

Group No.:

3733

Filed:

October 7, 2003

Examiner:

P. Philogene

For:

OCT 16 2006

Minimally Invasive Joint Implant with 3-Dimensional Geometry Matching

the Articular Surfaces

Mail Stop Amendment Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450

# TRANSMITTAL OF SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT BEFORE MAILING DATE OF EITHER A FINAL ACTION OR NOTICE OF ALLOWANCE (37 C.F.R. § 1.97(c))

#### CERTIFICATION UNDER 37 C.F.R. ' ' 1.8(a) and 1.10\*

(When using Express Mail, the Express Mail label number is *mandatory;* Express Mail certification is optional.)

I hereby certify that, on the date shown below, this correspondence is being:

	MAIL		
[x]	deposited with the United States Postal Service in an envelope address	ssed to Mail Stop Amendment, Commissioner for Pate	nts,•P.O. Box
	1450, Alexandria, VA 22313-1450.		
	37 C.F.R. § 1.8(a)	37 C.F.R. § 1.10*	
[x]	with sufficient postage as first class mail.	[] as "Express Mail Post Office to Addressee"	
		Mailing Label No	_ (mandatory)
[]	TRANSM facsimile transmitted to the Patent and Trademark Office, (703)		
		(type or print name of person certifyin	g)

\* Only the date of filing (' 1.6) will be the date used in a patent term adjustment calculation, although the date on any certificate of mailing or transmission under ' 1.8 continues to be taken into account in determining timeliness. See ' 1.703(f). Consider "Express Mail Post Office to Addressee" (' 1.10) or facsimile transmission (' 1.6(d)) for the reply to be accorded the earliest possible filing date for patent term adjustment calculations.

# TIME OF TRANSMITTAL OF ACCOMPANYING SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

- 1. The supplemental information disclosure statement transmitted herewith is being filed *after* three months of the filing date of this national application or the date of entry of the national stage as set forth in Section 1.491 in an international application or after the mailing date of the first Office action on the merits, whichever event occurred last but *before* the mailing date of either
  - (1) a final action under § 1.113 or
  - (2) a notice of allowance under § 1.311

whichever occurs first.

#### FEE

2. Accompanying this transmittal is the fee for submission of an information disclosure statement under section 1.97(c). (\$180.00)

#### **FEE PAYMENT**

3. Applicant elects the option to pay the fee set forth in 37 C.F.R. § 1.17(p) for submission of an information disclosure statement under § 1.97(c) (\$180.00).

Fee due \$180.00

#### METHOD OF PAYMENT OF FEE

4. Attached is a check in the amount of \$180.00.

Charge any additional fees required by this paper or credit any overpayment to Deposit Account No. 19-4972.

DATE: October 13, 2006

Alexander J. Smolenski, Jr., Esq. BROMBERG & SUNSTEIN LLP

Customer Number 02101 125 Summer Street Boston, MA 02110-1618

US

02960/00112 559919.1

#### IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In peopplication of:

Lang, et al

Application No.:

10/681,749

Group No.:

3733

Filed:

October 7, 2003

Examiner:

Philogene, P.

For:

MINIMALLY INVASIVE JOINT IMPLANT WITH 3-DIMENSIONAL GEOMETRY

MATCHING THE ARTICULAR SURFACES

Attn: Mail Stop Amendment Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

#### SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

(Supplemental Information Disclosure Statement--Page 1 of 23)

#### CERTIFICATION UNDER 37 C.F.R. SECTIONS 1.8(a) and 1.10\*

(When using Express Mail, the Express Mail label number is mandatory; Express Mail certification is optional.)

I hereby certify that, on the date shown below, this correspondence is being:

#### **MAILING**

[x] deposited with the United States Postal Service in an envelope addressed to Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450

37 C.F.R. SECTION 1.8(a)

37 C.F.R.SECTION 1.10\*

[ ] as "Express Mail Post Office to Addressee"

[x] with sufficient postage as first class mail.

Mailing Label No. (mandatory)

TRANSMISSION

[ ] transmitted by facsimile to the Patent and Trademark Office.

Signature

Date: October 13, 2006

Alexander J. Smolenski, Jr., Esq.

\*WARNING:

Each paper or fee filed by "Express Mail" must have the number of the "Express Mail" mailing label placed

thereon prior to mailing. 37 C.F.R. section 1.10(b).

"Since the filing of correspondence under section 1.10 without the Express Mail mailing label thereon is an oversight that can be avoided by the exercise of reasonable care, requests for waiver of this requirement will not be granted on petition." Notice of Oct. 24, 1996, 60 Fed. Reg. 56,439, at 56,442.

10/17/2006 MABDELR1 00000003 10681749

- NOTE: "An information disclosure statement shall be considered by the Office if filed by the applicant:
  - (1) Within three months of the filing date of a national application;
  - (2) Within three months of the date of entry of the national stage as set forth in section 1.491 in an international application; or
  - (3) Before the mailing date of a first Office action on the merits, whichever event occurs last." 37 C.F.R. section 1.97(b).
- NOTE: "Each individual associated with the filing and prosecution of a patent application has a duty of candor and good faith in dealing with the Office, which includes a duty to disclose to the Office all information known to that individual to be material to patentability as defined in this section." 37 C.F.R. section 1.56(a).
  - "Individuals associated with the filing or prosecution of a patent application within the meaning of this section are:
  - (1) each inventor named in the application;
  - (2) each attorney or agent who prepares or prosecutes the application; and
  - (3) every other person who is substantively involved in the preparation or prosecution of the application and who is associated with the inventor, with the assignee or with anyone to whom there is an obligation to assign the application." 37 C.F.R. section 1.56(c).
- NOTE: The "duty as described in section 1.56 will be met so long as the information in question was cited by the Office or submitted to the Office in the manner prescribed by sections 1.97(b) (d) and 1.98 before issuance of the patent." Notice of January 9, 1992, 1135 O.G. 13-25 at 17.

WARNING: "No information disclosure statement may be filed in a provisional application." 37 C.F.R. section 1.51(b).

#### List of Sections Forming Part of This Supplemental Information Disclosure Statement

The following sections are being submitted for this Supplemental Information Disclosure Statement:

(check sections forming a part of this statement: discard unused sections and number pages consecutively)

- 1. [x]Preliminary Statements
- 2. [x]Forms PTO/SB/08A and 08B (substitute for Form PTO-1449)
- 3. [ ]Statement as to Information Not Found in Patents or Publications
- 4. [ ]Identification of Prior Application in Which Listed Information Was Already Cited and for Which No Copies Are Submitted or Need Be Submitted
- 5. [ ]Cumulative Patents or Publications
- 6. [x]Copies of Listed Information Items Accompanying This Statement
- 7. [ ]Concise Explanation of Non-English Language Listed Information Items
  - 7A. [x] International Search Report
  - 7B. [ ]English Language Version of International Search Report
- 8. [ ]Translation(s) of Non-English Language Documents
- 9. [ ]Concise Explanation of English Language Listed Information Items (Optional)
- 10. [x]Identification of Person(s) Making This Supplemental Information Disclosure Statement

(complete the following, if appropriate)

Sections , respectively, have been continued on ADDED PAGE(S).

NOTE: "Once the minimum requirements are met, the examiner has an obligation to consider the information." Notice of April 20, 1992 (1138 O.G. 37-41, 37).

#### Section 1. Preliminary Statements

Applicants submit herewith patents, publications or other information, of which they are aware that they believe may be material to the examination of this application, and in respect of which, there may be a duty to disclose.

The filing of this supplemental information disclosure statement shall not be construed as a representation that a search has been made (37 C.F.R. section 1.97(g)), an admission that the information cited is, or is considered to be, material to patentability, or that no other material information exists.

The filing of this supplemental information disclosure statement shall not be construed as an admission against interest in any manner. Notice of January 9, 1992, 1135 O.G. 13-25, at 25.

## SECTION 2. FORMS PTO/SB/08A and 08B (formerly Form PTO-1449)

IN THE UNITED STATESPATENT AND TRADEMARK OFFICE

Applicants:

Lang, et al.

OCT 16 2006

Art Group Unit:

Attorney Docket:

2960/112

Serial No:

10/681,749

3733

Date Filed:

October 7, 2003

Examiner Name:

Philogene, P.

Invention:

Minimally Invasive Joint Implant with 3-Dimensional Geometry Matching

The Articular Surfaces

# LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT'S SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

	U.S. PATENT DOCUMENTS					
Examiner	Reference	Document	Issue Date	Inventor	Class/Subclass	
Initials	Number	Number				
/P.P./	FV	US 4,655,227	April, 1987	Gracovetsky, S.	128/781	
8	FW	US 4,699,156	October, 1987	Gracovetsky, S.	128/781	
0000	FX	US 4,813,436	March, 1989	Au, J.	128/779	
	FY	US 4,823,807	April, 1989	Russell, et al.	128/773	
889	FZ	US 5,099,859	March, 1992	Bell, G.	128/781	
8000	GA	US 5,129,908	July, 1992	Petersen, T.	606/88	
	GB	US 5,154,178	October, 1992	Shah, A.	128/653.2	
999	GC	US 5,246,013	September, 1993	Frank, et al.	128/774	
0000	GD	US 5,320,102	June, 1994	Paul, et al.	128/653.2	
8	GE	US 5,413,116	May, 1995	Radke, et al.	128/777	
	GF	US 5,433,215	July, 1995	Athanasiou, et al.	128/774	
	GG	US 5,445,152	August, 1995	Bell, et al.	128/653.5	
900	GH	US 5,501,687	March, 1996	Willert, et al.	606/94	
80000	GI	US 5,503,162	April, 1996	Athanasiou, et al.	128/774	
00000	GJ	US 5,541,515	July, 1996	Tsujita, K.	324/318	
99999	GK	US 5,564,437	October, 1996	Bainville, et al.	128/774	
8000	GL	US 5,682,886	November, 1997	Delp, et al.	128/653.1	
	GM	US 5,749,362	May, 1998	Funda, et al.	128/653.1	
	GN	US 5,749,876	May, 1998	Duvillier, et al.	606/88	
	GO	US 5,772,595	June, 1998	Votruba, et al.	600/415	
	GP	US 5,779,651	July, 1998	Buschmann, et al.	600/587	
	GQ	US 5,810,006	September, 1998	Votruba, et al.	128/653.2	
8000	GR	US 5,824,085	October, 1998	Sahay, et al.	623/16	
***************************************	GS	US 5,840,443	November, 1998	Gregg, et al.	429/212	
	GT	US 5,880,976	March, 1999	DiGioia III, et al.	364/578	
	GU	US 5,885,296	March, 1999	Masini	606/86	
	GV	US 5,885,298	March, 1999	Herrington, et al.	606/88	
8	GW	US 5,897,559	April, 1999	Masini, M.	606/86	

Lang, et al.

Attorney Docket:

2960/112

Serial No:

10/681,749

Art Group Unit:

3733

Date Filed:

October 7, 2003

Examiner Name:

Philogene, P.

Invention:

Minimally Invasive Joint Implant with 3-Dimensional Geometry Matching

	U.S. PATENT DOCUMENTS						
Examiner	Reference	Document	Issue Date	Inventor	Class/Subclass		
Initials	Number	Number					
/P.P./	GX	US 5,899,859	May, 1999	Votruba, et al.	600/415		
8	GY	US 5,913,821	June, 1999	Farese, et al.	600/425		
000	GZ	US 5,916,220	June, 1999	Masini, M.	606/88		
	HA	US 5,928,945	July, 1999	Seliktar, et al.	435/395		
	НВ	US 5,961,523	October, 1999	Masini	606/86		
	HC	US 5,968,051	October, 1999	Luckman, et al.	606/88		
	HD	US 5,995,738	November, 1999	DiGioia III, et al.	395/500.32		
	HE	US 6,002,859	December, 1999	DiGioia III, et al.	395/500.32		
	HF	US 6,078,680	June, 2000	Yoshida, et al.	382/128		
	HG	US 6,102,916	August, 2000	Masini	606/88		
	НН	US 6,146,422	November, 2000	Lawson, K.	623/17.16		
	HI	US 6,156,069	December, 2000	Amstutz	623/22.11		
	НЈ	US 6,161,080	December, 2000	Aouni-Ateshian, et al.	703/11		
	HK	US 6,175,655	January, 2001	George III, et al.	382/257		
	HL	US 6,187,010	February, 2001	Masini	606/86		
	НМ	US 6,205,411	March, 2001	DiGioia III, et al.	703/11		
2000	HN	US 6,249,692	June, 2001	Cowin, S.	600/407		
	НО	US 6,289,753	September, 2001	Basser, et al.	73/866		
	HP	US 6,310,477	October, 2001	Schneider, E.	324/307		
	НО	US 6,310,619	October, 2001	Rice, R.	345/420		
	HR	<u> </u>	November, 2001	Goodman, et al.	430/8		
8	HS		December, 2001	Tanabe, K.	385/12		
	HT	US 6,334,066	December, 2001	Rupprecht, et al.	600/411		
- 8	HU	<del></del>	September, 2002	Brosseau, et al.	600/595		
	HV		March, 2003	Brosseau, et al.	600/595		
-	HW	<del></del>	May, 2003	Pelletier, et al.	600/410		
9999	HX		September, 2003	Simon, et al.	623/17.19		
X	HY		March 30, 2004	Carignan, et al.	623 20.35		
889	HZ	<del> </del>	September, 2004	Steines, et al.	600/407		
890	IA	_ <del></del>	July 12, 2005	Rolston	623 20.3		
<u> </u>	173	05 0,710,011	1 , ,				

Applicants: Lang, et al. Attorney Docket: 2960/112

Serial No: 10/681,749 Art Group Unit: 3733

Date Filed: October 7, 2003 Examiner Name: Philogene, P.

Invention: Minimally Invasive Joint Implant with 3-Dimensional Geometry Matching

		U.S. PATENT PI	UBLICATION DO	CUMENTS	
Examiner	Reference	Document	Publication Date	Inventor	Class/Subclass
Initials	Number	Number			
/P.P./	IB	US 2001/0001120	May, 2001	Masini	606/86
8	IC	US 2002/0147392	October, 2002	Steines, et al.	600/407
000	ID	US 2002/0016543	February 7, 2002	Tyler	600/410
	IE	US 2002/0127264	Sept. 12, 2002	Felt, et al.	424/423
0000	IF	US 2002/0147392	October 10, 2002	Steines, et al.	600/407
00000	IG	US 2002/0173852	Nov. 21, 2002	Felt, et al.	623/20.32
	IH	US 2002/0177770	Nov. 28, 2002	Lang, et al.	600/410
	II	US 2003/0015208	January 23, 2003	Lang, et al.	128/922
0000	IJ	US 2003/0158606	August 21, 2003	Coon, et al.	623/20.15
	IK	US 2003/0225457	Dec. 4, 2003	Justin, et al.	623 20.14
	IL	US 2004/0102852	May 27, 2004	Johnson, et al.	623/20.15
	IM	US 2004/0122521	June 24, 2004	Lee, et al.	623/20.15
	IN	US 2004/0153162	August 5, 2004	Sanford, et al.	623/20.3
000	IO	US 2004/0153164	August 5, 2004	Sanford, et al.	623/20.29
000000	IP	US 2004/0167390	August 26, 2004	Alexander, et al.	600/410
000000	IQ	US 2004/0167630	August 26, 2005	Rolston	623/20.14
000000	IR	US 2004/0193280	Sept. 30, 2004	Webster, et al.	623/20.33
00000	IS	US 2005/0015153	January 20, 2005	Goble, et al.	623/23.46
00000	IT	US 2005/0107883	May 19, 2005	Goodfried, et al.	623/20.15
2000	IU	US 2005/0107884	May 19, 2005	Johnson, et al.	623/20.15
000000	IV	US 2005/0171612	August 4, 2005	Rolston	623/20.19

	FOREIGN PATENT DOCUMENTS						
Examiner Initials	Reference Number	Country Code	Document Number	Publication Date	Patentee or Applicant	Class/Subclass	
/P.P./	IW	wo	98/12994	April, 1998	Eriksson, I.	A61F 2/28, 2/32	
/P.P./	IX	wo	00/35346	June 22, 2000	Moran, T.	A61B 511	
/P.P./	IY	wo	01/10356	February, 2001	Ticulate Holdings, Ltd.	A61F 2/46	

Lang, et al.

Attorney Docket:

2960/112

Serial No:

10/681,749

Art Group Unit:

3733

Date Filed:

October 7, 2003

Examiner Name:

Philogene, P.

Invention:

Minimally Invasive Joint Implant with 3-Dimensional Geometry Matching

/P.P./	IZ	wo	02/22013	March, 2002	Leland Stanford Junior University	A61B 5/055
/P.P./	JA	WO	03/47470	March 14, 2003	British American Tobacco	206/268

		OTHER DO	OCUMENTS
Examiner Initials	Reference Number	Author	Title of Article, Title of Journal, Volume Number, Page Numbers, Date
/P.P./	JB	ADAM, et al.	"NMR Tomography Of The Cartilage Structures Of The Knee Joint With 3D-Volume Imag Combined With A Rapid Optical-Imaging Computer," ROFO Fortschr. Geb. Rontgenstr. Nuklearmed; 150(1): 44-48 (1989)
/P.P./	JC	ADAM, G., et al.	"MR Imaging of the Knee: Three-Dimensional Volume Imaging Combined with Fast Processing", J. Compyt. Asst. Tomogr; : 984-988 (NovDec. 1989)
/P.P./	JD	ADAMS, ME, et al.	"Quantitative Imaging of Osteoarthritis", Semin Arthritis Rheum June; 20(6) Suppl. 2: 26-39 (1991)
/P.P./	JE	AHMAD, CS, et al.	"Biomechanical and Topographic Considerations for Autologous Osteochondral Grafting in the Knee", Am J Sports Med Mar-Apr.; 29(2): 201-206 (2001)
/P.P./	JF	ALEXANDER, E.J., et al.	"Internal To External Correspondence In The Analysis Of Lower Limb Bone Motion", Proceedings of the 1999 ASME Summer Bioengineering Conference, Big Sky, Montana (1999)
/P.P./	JG	ALEXANDER, E.J., et al.	"Correcting for Deformation In Skin-Based Marker Systems", Proceedings of the 3 <sup>rd</sup> Annual Gait and Clinical Movement Analysis Meeting, San Diego, CA (1998)
/P.P./	JH	ALEXANDER, E.J.,	"Estimating The Motion Of Bones From Markers Of Bones From Markers On The Skin (Doctoral Dissertation)", U. of Illinois at Chicago (1998)
/P.P./	JI	ALEXANDER, E.J., et al.	"State Estimation Theory In Human Movement Analysis", Proceedings of the 1998 ASME International Mechanical Engineering Congress (1998)
/P.P./	JJ	ALEXANDER, et al.	"Dynamic Functional Imaging Of The Musculoskeletal System". ASME Winter International Congress and Exposition. Nashville, TN (1999)
/P.P./	JK	ALEXANDER, et al.	"Optimization Techniques For Skin Deformation Correction", International Symposium on 3-D H Human Movement Conference, Chattanooga, TN, (1998)
/P.P./	JL	ALLEN, et al.	"Late Degenerative Changes After Meniscectomy 5 Factors Affecting The Knee After Operations", <i>J Bone Joint Surg</i> 66B: 666-671 (1984)

Lang, et al.

Attorney Docket:

2960/112

Serial No:

10/681,749

Art Group Unit:

3733

Date Filed:

October 7, 2003

Examiner Name:

Philogene, P.

Invention:

Minimally Invasive Joint Implant with 3-Dimensional Geometry Matching

/P.P./	JM	ALLEY, et al.	"Ultrafast Contrast-Enhanced Three Dimensional MR Aagiography: State Of The Art," Radiographics 18: 273-285 (1998)
/P.P./	JN	ANDRIACCHI, et al.	"Gait Analysis As A Tool To Assess Joint Kinetics Biomechanics Of Normal And Pathological Human Articulating Joints", Nijhoff, Series E 93:83-102 (1985)
/P.P./	JO	ANDRIACCHI, et al.	"In Vivo Measurement Of Six-Degrees-Of-Freedom Knee Movement During Functional Testing", Transactions of the Orthopedic Research Society; pp. 698 (1995)
/P.P./	JP	ANDRIACCHI, et al.	"A Point Cluster Method For In Vivo Motion Analysis: Applied To A Study Of Knee Kinematics", J. Biomech Eng. 120(12):743-749 (1998)
/P.P./	JQ	ANDRIACCHI, et al.	"Methods For Evaluating The Progression Of Osterarthritis", Journal of Rehabilitation Research and Development 37(2): 163-170 (2000)
/P.P./	JR	ANDRIACCHI, T.P.	"Dynamics of Knee Malaligmnent", Orthop Clin North Am 25: 395-403 (1994)
/P.P./	JS	ARO HT, et al.	"Clinical Use of Bone Allografts", Ann Med 25: 403-412, (1993)
***************************************	JI	BRSTPR, er al.	**************************************
/P.P./ /P.P./	JU	BEAULIEU, et al.,	"Dynamic Imaging Of Glenohumeral Instability With Open MRI" Int. Society For Magnetic Resonance In Medicine, Sydney, AU (1998)
/P.P./	JV	BEAULIEU, et al.	"Glenohumeral Relationships During Physiological Shoulder Motion And Stress Testing: Initial Experience With Open MRI And Active Scan-25 Plane Registration" Radiology (accepted for publication) (1999)
/P.P./	JW	BECKMANNN, et al.	"Noninvasive 3D MR Microscopy as Tool in Pharmacological Research: Application to a Model of Rheumatoid Arthritis", Magn Reson Imaging 13 (7): 10-13-1017 (1995)
/P.P./	JX	BOBIC, V.	"Arthoscopic Osteochondral Autograft Transplantation In Anterior Cruciate Ligament Reconstruction: A Preliminary Clinical Study", Knee Surg. Sports Traumatol Arthrosc 3(4): 262-264 (1996)
/P.P./	JY	BOE, S., et al.	"Arthroscopic Partial Meniscectomy In Patients Aged Over 50", J. Bone Joint Surg. 68B: 70-7 (1986)
/P.P./	JZ	BORTHAKUR, et al.	"In Vivo Triple Quantum Filtered Sodium MRI of Human Articular Cartilage", Seventh Scientific Meeting of ISMRM, p. 549 (1999)
/P.P./	KA	BREGLER, et al.	"Recovering Non-Regid 3D Shape From Image Streams", ProcIEEE Conference on Computer Vision and Pattern Recognition (2000) in press
/P.P./	KR.	BRET. et al.	"Quantitative Analysis Of Riomedical Images" the f
/P.P./	KC	BRITTBERG, et al.	"A Critical Analysis Of Cartilage Repair", Acta Orthop Scand 68 (2): 186-191 (1997)

Lang, et al.

Attorney Docket:

2960/112

Serial No:

10/681,749

Art Group Unit:

3733

Date Filed:

October 7, 2003

Examiner Name:

Philogene, P.

Invention:

Minimally Invasive Joint Implant with 3-Dimensional Geometry Matching

	KD	BRITTBERG, et al.	"Treatment Of Deep Cartilage Defects In The Knee With
/P.P./			Autologous Chondrocyte Transoplantation", N. Eng. J. Med.
			331(14): 889-895 (1994)
/P.P./	KE	BRODERICK, et al.	"Severity Of Articular Cartilage Abnormality In Patients With
/F.F./			Osteoarthritis: Evaluation With Fast Spin-Echo MR Vs
<del> </del>			Arthroscopy", AJR 162: 99-103 (1994)
/D D /	KF	BURGKART, R., et al.	"Magnetic Resonance Imaging-Based Assessment of Cartilage
/P.P./			Loss in Severe Osteoarthritis", Arth Rheum 44(9): 2072-2077
			(Sept., 2001)
/P.P./	······································	လေးရှိသို့ ရောက်ရှိသည်။ ရှိသို့ ရှိသို့ ရှိသို့ ရောက်ရှိသည်။ ရှိသို့ ရောက်ရေးမှ ရှိသို့ လေးလေးလေးလေးလေးလေးလေးလ လေးရှိသည်။ ရောက်ရှိသည်။ ရောက်ရှိသည်။ ရောက်ရှိသည်။ ရောက်ရှိသည်။ ရောက်ရှိသည်။ ရောက်ရှိသည်။ ရောက်ရှိသည်။ ရောက်ရှိ	- Depts: of Biomedical Engineering Medicine, Neurology &
/1 .1 ./			
			Dirmingham, USA
	KH	BUTTS, et al.	"Real-Time MR Imaging Of Joint Motion On An Open MR
/P.P./			Imaging Scanner", Radiological Society of North America, 83rd
			Scientific Assembly and Annual Meeting, Chicago, IL, (1997)
(pmp pmp /	KI	CARANO, et al.	"Estimation Of Erosive Changes In Rheumatoid Arthritis By
/P.P./			Temporal Multispectral Analysis", Seventh Scientific Meeting
			of ISMRM, p. 408, (1999)
	KJ	CASTRIOTA-SCANDERBEG, A., et	"Precision of Sonographic Measurement of Articular Cartilage:
/P.P./	110	al.	Inter-and Intraobserver Analysis", Skeletal Radiol, 25: 545-549
			(1996)
——————————————————————————————————————	KK	CHAN, et al.	"Osteoarthritis Of The Knee: Comparison Of Radiography, CT
/P.P./	IXIX		And MR Imaging To Asses Extent And Severity", AJR Am J
/୮.୮./			Roentgenol, 157(4): 799-806, (1991)
	KL	CLARKE, IC, et al.	"Human Hip Joint Geometry and Hemiarthroplasty Selection",
/P.P./	KL		The Hip. C.V. Mosby, St. Louis, pp. 63-89
/ 1 = 1 = /			(1975)
	KM	COHEN, et al.	"Knee Cartilage Topography, Thickness, And Contact Areas
/P.P./	IXIVI		From Mri: In-Vitro Calibration And In-Vivo Measurements",
/1 .1 ./			Osteoarthritis and Cartilage 7:95-109 (1999)
	KN	CREAMER, P., et al.	"Quantitative Magnetic Resonance Imaging of the Knee: A
/P.P./	IXIV		Method of Measuring Response to Intra-Articular Treatments".
, , , , ,			Ann Rheum Dis., 56; 378-381 (1997)
	КО	DANIEL, et al.	"Breast Cancer-Gadolinium-Enhanced MR Imaging With A
/P.P./	"		0.5T Open Imager And Three-Point Dixon Technique",
7			Radiology 207(1): 183-190 (1998)
	KP	DARDZINSKI, et al.	"Entropy Mapping of Articular Cartilage", ISMRM Seventh
/P.P./	KI'	Zinoznow, v ali	Scientific Meeting, Philadelphia, PA (1999)
	VO	DARDZINSKI, et al.	"T1-T2 Comparison in Adult Articular Cartilage", ISMRM
	KQ	DANDERSKI, C. al.	Seventh Scientific Meeting, Philadelphia, PA (May 22-28,
/P.P./			1999)
	I/D	DISLER, et al.	"Detection Of Knee Hyaline Cartilage Defects Using Fat-
/P.P./	KR	DISEER, CLAI.	Suppressed Three-Dimensional Spoiled Gradient-Echo MR
/Pedro Pl	hilogene/		1 ''
			Imaging: Comparison With Standard MR Imaging And
	170	DICLED ALAI	Correlation With Arthroscopy", AJR 165: 377-382 (1995)
/P.P./ /Pedro Pl	KS	DISLER, et al.	"Fat-Suppressed Three-Dimensional Spoiled Gradient-Echo
/Pedro Pl	hilogene/		MR Imaging Of Hyaline Cartilage Defects In The Knee:
			Comparison With Standard MR Imaging And Arthroscopy",
			AJR 167: 127-132 (1996)

Lang, et al.

Attorney Docket:

2960/112

Serial No:

10/681,749

Art Group Unit:

3733

Date Filed:

October 7, 2003

Examiner Name:

Philogene, P.

Invention:

Minimally Invasive Joint Implant with 3-Dimensional Geometry Matching

/P.P./	KT	DISLER, D.G.	"Fat-Suppressed Three-Dimensional Spoiled Gradient- Recalled MR Imaging: Assessment Of Articular And Physseal Hyaline Cartilage" AJS 169: 1117-1123 (1997)
/P.P./	ĸU	DOHERTY, M., et al.	MT: Osteoarthritis. In: Maddison, PJ, Isenberg, DA, Woo, P., et al., eds. Oxford Textbook of Rheumatology, Vol. 1., Oxford, NY, Tokyo; Oxford U. Press, 959-983 (1993)
/P.P./	KV	DOUGADOS, et al.	"Longitudinal Radiologic Evaluation Of Osteoarthritis Of
/P.P./	KW	DU, et al.	"Reduction Of Partial-Volume Artifacts With Zero Filled Interpolation In Three-Dimensional MR Angiography", J. Magn Res. Imaging 4: 733-741 (1994)
/P.P./	KX	DU, et al.	"Vessel Enhancement Filtering In Three-Dimensional Mr Angiography", J. Magn Res Imaging 5: 151-157 (1995)
/P.P./	KY	DUFOUR, et al.	"A Technique for the Dynamical Evaluation of the Acromiohumeral Distance of the Shoulder in the Seated Position under Open-field MRI." Seventh Scientific Meeting of ISMRM, p. 406 (1999)
/P.P./	KZ	DUMOULIN, et al.	"Real-Time Position Monitoring Of Invasive Devices Using Magnetic Resonance," Magn Reson Med 29:411-5 (1993)  "Quantification of fArticular Cartilage in the Knee with
/P.P./	LA	DUPUY, DE, et al.	Three-Dimensional MR Imaging", Acad Radiol, 3: 919-724
/P.P./	LB	ECKSTEIN, et al.	"Determination Of Knee Joint Cartilage Thickness Using Three-Dimensional Magnetic Resonance Chondro-Crassometry (3D MR-CCM)", Magn. Reson. Med. 36(2): 256-265 (1996)
/P.P./	LC	ECKSTEIN, et al.	"Effect Of Gradient And Section Orientation On Quantitative Analyses Of Knee Joint Cartilage", Journal of Magnetic Presence Imaging 11: 161-167 (2000)
/P.P./	LD	ECKSTEIN, et al.	"Effect Of Physical Exercise On Cartilage Volume And Thickness In Vivo: An MR Imaging Study", Radiology 207: 243-248 (1998)
/P.P./	LE	EKSTEIN, et al.	"Functional Analysis Of Articular Cartilage Deformation, Recovery, And Fluid Flow Following Dynamic Exercise In Vivo", Anatomy and Embryology 200: 419-424 (1999)
/P.P./	LF	ECKSTEIN, et al.	"In Vivo Reproducibility Of Three-Dimensional Cartilage Volume And Thickness Measurements With Mr Imaging", AJR 170(3): 593-597 (1998)
/P.P./	LC	ECKSTEIN, et al.	"New Quantitative Approaches With 3-D MRI: Cartilage Morphology, Function And Degeneration", Medical Imaging International (NovDec. 1998)
/P.P./ /P.P./	LH	ECKSTEIN, et al.	"Side Differences Of Knee Joint Cartilage Volume, Thicknet And Surface Area, And Correlation With Lower Limb Dominance – An MRI-Based Study", Osteoarthritis and
/P.P./	LI	ECKSTEIN, et al.	"Accuracy of Cartilage Volume and Thickness Measuremen with Magnetic Resonance Imaging", Clin. Orthop. 1998; 35 137-148 T. 60, V. II

Lang, et al.

Attorney Docket:

2960/112

Serial No:

10/681,749

Art Group Unit:

3733

Date Filed:

October 7, 2003

Examiner Name:

Philogene, P.

Invention:

Minimally Invasive Joint Implant with 3-Dimensional Geometry Matching

/P.P./	LJ	ECKSTEIN, et al.	"Magnetic Resonance Chondro-Crassometry (MR CCM): A Method for Accurate Determination of Articular Cartilage Thickness?" Magn. Reson. Med. 1996; 35: 89-96
/P.P./	LK	ECKSTEIN, et al.	"The Influence of Geometry on the Stress Distribution in Joints - A Finite Element Analysis", Anat Embryol, 189: 545- 552 (1994)
/P.P./	LL	ECKSTEIN, et al.	"The Morphology of Articular Cartilage Assessed by Magnetic Resonance Imaging: Reproducibility and Anatomical Correlation", Sur. Radiol Anat, 16: 429-438
/P.P./	LM	ELTING, et al.	"Unilateral Frame Distraction: Proximal Tibial Valgus Osteotomy For Medial Gonarthritis", Contemp Orthop 27(6): 522-524 (1993)
/P.P./	LN	FABER, et al.	"Gender Differences In Knee Joint Cartilage Thickness, Volume And Articular Surface Areas: Assessment With Quantitative Three-Dimensional MR Imaging", Skeletal radiology 30 (3): 144-150 (2001)
/P.P./	LO	FABER, et al.	"Quantitative Changes of Articular Cartilage Microstructure During Compression of an Intact Joint", Seventh Scientific
/P.P./	LP	FALCAO, et al.	"User-Steered Image Segmentation Paradigms: Live Wire And Live Lane", Graphical Models and Image Processing 60:233-260 (1998)
/P.P./	LQ	FELSON, et al.	"Weight Loss Reduces The Risk For Symptomatic Knee Osteoarthritis In Women: The Framingham Study", Ann
/P.P./	LR	GANDY, et al.	"One-Year Longitudinal Study Of Femoral Cartilage Lesions In Knee Arthritis", Seventh Scientific Meeting of ISMRM, p.
/P.P./	LS	GARRETT, J.C.	"Osteochondral Allografts For Reconstruction Of Articular Defects Of The Knee", Instr Course Lect 47:51-522 (1998)
/P.P./	LT	GERSCOVICH, E.O.	"A Radiologist's Guide To The Imaging In The Diagnosis And Treatment Of Developmental Dysplasia Of The Hip" Skeletal Radiol, 26: 447-456 (1997)
/P.P./	LU	GHOSH, et al.	"Watershed Segmentation Of High Resolution Articular Cartilage Images For Assessment Of Osteoarthritis", International Society for Magnetic Resonance in Medicine, Philadelphia (1999)
/P.P./	LV	GLASER, et al.	"Optimization And Validation Of A Rapid Highresolution TI W 3-D Flash Waterexcitation MR Sequence For The Quantitative Assess-Ment Of Articular Cartilage Volume And Thickness" Magnetic Resonance Imaging, 19: 177-185 (2001)
/P.P./	superior to	Coccoo Co	Languageng of Articular Cartilages Strations in the Redis Language Cartillage"
/P.P./	LX	GOURAUD, H.	"Continuous Shading Of Curved Surfaces", IEEE Trans on Computers C-20(6) (1971)
/P.P./	LY	GRAICHEN, et al.	"Three-Dimensional Analysis Of The Width Of The Subacromial Space In Healthy Subjects And Patients With Impingement Syndrome", American Journal of Roentgenology 172: 1081-1086 (1999)

Lang, et al.

Attorney Docket:

2960/112

Serial No:

10/681,749

Art Group Unit:

3733

Date Filed:

October 7, 2003

Examiner Name:

Philogene, P.

Invention:

Minimally Invasive Joint Implant with 3-Dimensional Geometry Matching

/P.P./	930000000000000000000000000000000000000	zeofylodrajnijačenfedjenistykomoreococococococococococococococococococo	······································
/	2.3		Dissassat Mixtual Rispate Of Anticular Contiling e"
/P.P./	MA	HARDY, et al.	"Measuring the Thickness of Articular Cartilage from MR Images", J. Magnetic Resonance Imaging 13: 120-126 (2001)
/P.P./	МВ	HARDY, et al.	"The Influence Of The Resolution And Contrast On Measuring The Articular Cartilage Volume In Magnetic Resonance Images" Magn Reson Imaging, 18(8): 965-972 (Oct., 2000)
/P.P./	МС	HARGREAVES, et al.	"Imaging Of Articular Cartilage Using Driven Equilibrium" Int'l. Society for Magnetic Resonance in Medicine, Sydney, AU, pp. 17-24 (Apr., 1998)
/P.P./	MD	HARGREAVES, et al.	"MR Imaging of Articular Cartilage Using Driven Equilibrium", Magnetic Resonance in Medicine 42(4): v695- 703 (Oct., 1999)
/P.P./	ME	HARGREAVES, et al.	"Technical Considerations For DEFT Imaging", International Society for Magnetic Resonance in Medicine, Sydney, AU, pp. 17-24 (Apr., 1998)
/P.P./	MF	HAUBNER, M., et al.	"A Non-Invasive Technique For 3-Dimensional Assessment Of Articular Cartilage Thickness Based On MRI Part @: Validation Using CT Arthrograpphy", Magn Reson Imaging 15(7): 805-813 (1997)
/P.P./	MG	HAUT, et al.	"A High Accuracy Three-Dimensional Coordinate Digitizing System for Reconstructing the Geometry of Diarthrodial Joints", J. Biomechanics, 31: 571-577 (1998)
/P.P./	МН	HAYES, et al.	"Evaluation Of Articular Cartilage: Radiographic And Cross-Sectional Imaging Techniques", Radiographics 12:409- 428 (1992)
/P.P./	MI	HENKELMAN, et al.	"Anisotropy Of NMR Properties Of Tissues", Magn Res Med. 32: 592-601 (1994)
/P.P./	MJ	HERBERHOLD, C., et al.	"An MR-Based Technique For Quantifying The Deformation Of Articular Cartilage During Mechanical Loading In An Intact Cadaver Joint", Magnetic Resonance in Medicine, 39(5): 843-850 (1998)
/P.P./	MK	HERBERHOLD, et al.	"In Situ Measurement Of Articular Cartilage Deformation In Intact Femorapatellar Joints Under Static Loading", Journal of Biomechanics 32: 1287-1295 (1999)
/P.P./	ML	HERRMANN, J.M., et al.	"High Resolution Imaging of Normal and Osteoarthritic Cartilage with Optical Coherence Tomogrqaphy", J. Rheumatoil, 26: 627-635 (1999)
/P.P./	*****		Carridge of Osteometricis (OA) when had in a Michell beast  Histografic Lindy:
/P.P./	MN	HOHE, et al.	"Surface Size, Curvature Analysis, And Assessment Of Knee Joint Incongruity With MR Imaging In Vivo", Magnetic Resonance in Medicine, 47: 554-561 (2002)
/P.P./	МО	HUGHES, S.W., et al.	"Technical Note: A Technique for Measuring the Surface Area of Articular Cartilage in Acetabular Fractures", Br. J. Radiol, 67: 584-588 (1994)

Applicants: Lang, et al. Attorney Docket: 2960/112

Serial No: 10/681,749 Art Group Unit: 3733

Date Filed: October 7, 2003 Examiner Name: Philogene, P.

Invention: Minimally Invasive Joint Implant with 3-Dimensional Geometry Matching

/P.P./	MOTHUSMANN, O., et al.	"Three-Dimensional Morphology of the Proximal Femur", J. Arthroplasty, 12(4): 444-450 (June, 1997)
/P.P./	MP HYHLIK-DURR, et al	
/P.P./	MQ IHARA, II.	"Double-Contrast CT Arthrography of the Cartilage of the Patellofemoral Joint", Clin. Orthop., 198: 50-55 (Sept., 1985)
/P.P./	MR IIDA, H., et al.	"Socket Location in Total Hip Replacement: Preoperative Computed Tomography and Computer Simulation" Acta Orthop Scand, 59(1): 1-5 (1988)
/P.P./	MS IRARRAZABAL, et a	. Mag. Res. Med. 33: 656-662 (1995)
/P.P./	MT JOHNSON, et al.	"Development Of A Knee Wear Method Based On Prosthetic In Vivo Slip Velocity" Transactions of the Orthopedic Research Society, 46 <sup>th</sup> Annual Meeting (Mar., 2000)
/P.P./	MU JOHNSON, et al.	"The Distribution Of Load Across The Knee. A Comparison Of Static And Dynamic Measurements", J. Bone Joint Sur. 62B: 346-349 (1980)
/P.P./	MV JOHNSON, T.S.	"In Vivo Contact Kinematics Of The Knee Joint: Advancing The Point Cluster Technique", Ph.D. Thesis, U. of Minnesota (1999)
/P.P./	MW JONSSON, K., et al.	"Precision of Hyaline Cartilage Thickness Measurements", Acta Radiol; 33(3): 234-239 (1992)
/P.P./	MX KANEUJI, A., et al.	"Three Dimensional Morphological Analysis of the Proximal Femoral Canal, Using Computer-Aided Design System, in Japanese Patients with Osteoarthrosis of the Hip", J. Orthop Sci; 5(4): 361-368 (2000)
/P.P./	MY KARVONEN, R.L., et	t al. "Articular Cartilage Defects of the Knee: Correlation Between Magnetic Resonance Imaging and Gross Pathology", Ann Rheum Dis.; 49: 672-675 (1990)
/P.P./	MZ KASS, et al.	"Snakes: Active Contour Models", Int. J. Comput. Vision 1: 321-331 (1988)
/P.P./	NA KLOSTERMAN, et a	Tesla", ISMRM Seventh Scientific Meeting, Philadelphia, PA, (May 22-28, 1999)
/P.P./	NB KNAUSS, et al.	"Self-Diffusion of Water in Cartilage and Cartilage Components as Studied by Pulsed Field Gradient NMR", Magnetic Resonance in Medicine 41:285-292 (1999)
/P.P./	NC KOH, H.L., et al.	"Visualization by Magnetic Resonance Imaging of Focal Cartilage Lesions in the Excised Mini-Pig Knee", J. Orthop. Res.; 14(4): 554-561 (July, 1996)
/P.P./	ND KORHONEN, et al.	"Importance Of The Superficial Tissue Layer For The Indentation Stiffness Of Articular Cartilage", Med. Eng. Phys. 24(2): 99-108 (Mar., 2002)
/P.P./	NE KORKALA O., et al.	"Autogenous Osteoperiosteal Grafts in the Reconstruction of Full-Thickness Joint Surface Defects", Int. Orthop.; 15(3): 233-237 (1991)

Lang, et al.

Attorney Docket:

2960/112

Serial No:

10/681,749

Art Group Unit:

3733

Date Filed:

October 7, 2003

Examiner Name:

Philogene, P.

Invention:

Minimally Invasive Joint Implant with 3-Dimensional Geometry Matching

/P.P./	NF	KSHIRSAGAR, et al.	"Measurement Of Localized Cartilage Volume And Thickness Of Human Knee Joints By Computer Analysis Of Three- Dimensional Magnetic Resonance Images", Invest Radiol.:33(5): 289-299 (May, 1998)
/P.P./	NG	KWAK, S.D., et al.	"Anatomy of Human Patellofemoral Joint Articular Cartilage: Surface Curvature Analysis", J. Orthop. Res.; 15: 468-477 (1997)
/P.P./	NH	LAFORTUNE, et al.	"Three Dimensional Kinematics Of The Human Knee During Walking", J. Biomechanics 25: 347-357 (1992)
/P.P./	NI	LANG, et al.	"Cartilage Imaging: Comparison Of Driven Equilibrium With Gradient-Echo, SPAR, And Fast Spin-Echo Sequences", International Society for Magnet Resonance in Medicine, Sidney Australia, April 17-24, (1998)
/P.P./	NJ	LANG, et al.	"Functional Joint Imaging: A New Technique Integrating MRI And Biomotion Studies", International Society for Magnetic Resonance in Medicine, Denver (Apr. 18-24, 2000)
/P.P./	NK	LANG, et al.	"Risk Factors For Progression Of Cartilage Loss: A Longitudinal MRI Study", European Society of Musculoskeletal Radiology, 6 <sup>th</sup> Annual Meeting, Edinburgh, Scotland (1999)
/P.P./	NL	LEDINGHAM, et al.	"Factors affecting radiographic progression of knee osteoarthritis", Ann. Rheum Dis. 54: 53-58 (1995)
/P.P./	NM	LEFEBVRE, F., et al.	"Automatic Three-Dimensional Reconstruction and Characterization of Articular Cartilage from High-Resolution Ultrasound Acquisitions", Ultrasound Med. Biol.; 24(9): 1369-1381 (Nov., 1998)
/P.P./	NN	LI, H.	"A Boundary Optimization Algorithm for Delineating Brain Objects from CT Scans: Nuclear Science Symposium and Medical Imaging Conference 1993 IEEE Conference Record, San Francisco, CA
/P.P./	NO	LIN, C.J., et al.	"Three-Dimensional Characteristics of Cartilagenous and Bony Components of Dysplastic Hips in Children: Three- Dimensional Computed Tomography Quantitative Analysis", J. Pediatr. Orthop.; 17: 152-157 (1997)
/P.P./	NP	LORENSEN, et al.	"Marching Cubes: A High Resolution 3d Surface Construction Algorithm", Comput. Graph 21: 163-169 (1987)
/P.P./	NQ	LOSCH, et al.	"A Non-Invasive Technique For 3-Dimensional Assessment O Articular Cartilage Thickness Based On MRI Part 1:Development Of A Computational Method", Magn. Res. Imaging 15(7): 795-804 (1997)
/P.P./	NR	LU, et al.	"Bone Position Estimation From Skin Marker Co-Ordinates Using Globals Optimization With Joint Constraints", J. Biomechanics 32: 129-134 (1999)
/P.P./	NS	LUCCHETTI, et al.	"Skin Movement Artifact Assessment And Compensation In The Estimation Of Knee-Joint Kinematics", J. Biomechanics 31: 977-984 (1998)

Lang, et al.

Attorney Docket:

2960/112

Serial No:

10/681,749

Art Group Unit:

3733

Date Filed:

October 7, 2003

Examiner Name:

Philogene, P.

Invention:

Minimally Invasive Joint Implant with 3-Dimensional Geometry Matching

/P.P./	NT	LÜSSE, et al.	"Measurement Of Distribution Of Water Content Of Human Articular Cartilage Based On Transverse Relaxation Times: An In Vitro Study", Seventh Scientific Meeting of ISMRM, p. 1020 (1999)
/P.P./	NU	LYNCH, et al.	"Cartilage Segmentation Of 3D MRI Scans Of The Osteoarthritic Knee Combining User Knowledge And Active Contours", Proc. SPIE 3979 Medical Imaging, San Diego, CA (Feb., 2000)
/P.P./	NV	MAKI, et al.	"SNR Improvement In NMR Microscopy Using DEFT", J. Mag. Res. (1988)
/P.P./	NW	MARSHALL, K.W., et al.	"Quantitation of Articular Cartilage Using Magnetic Resonance Imaging and Three-Dimensional Reconstruction", J. Orthop. Res.; 13: 814-823 (1995)
/P.P./	NX	MATTILA, K.T., et al.	"Massive Osteoarticular Knee Allografts: Structural Changes Evaluated with CT", Radiology; 196: 657-660 (1995)
/P.P./	NY	MERKLE, et al.	"A Transceiver Coil Assembly For Hetero-Nuclear Investigations Of Human Breast At 4T", Seventh Scientific Meeting of ISMRM; p. 170 (1999)
/P.P./	NZ	MEYER, et al.	"Simultaneous Spatial And Spectral Selective Excitation", Magn. Res. Med. 15:287-304 (1990)
/P.P./	OA	MILLS, et al.	"Magnetic Resonance Imaging Of The Knee: Evaluation Of Meniscal Disease", Curr. Opin. Radiol. 4(6): 77-82 (1992)
/P.P./	OB	MILZ, S., et al.	"The Thickness of the Subchondral Plate and Its Correlation with the thickness of the Uncalcified Articular Cartilage in the Human Patella", Anat. Embryol.; 192: 437-444 (1995)
/P.P./	OC	MODEST, et al.	"Optical Verification of A Technique For In Situ Ultrasonic Measurement of Articular Cartilage Thickness", J. Biomechanics 22(2): Pp. 171-176 (1989)
/P.P./	OD	MOLLICA, et al.	"Surgical Treatment Of Arthritic Varus Knee By Tibial Corticotomy And Angular Distraction With An External Fixator", Ital. J. Orthop. Traumatol 18 (1): 17-23 (1992)
/P.P./	OE	MOUSSA, M.	"Rotational Malalignment and Femoral Torsion in Osteoarthritic Knees with Patellofemoral Joint Imvolvement: A CT Scan Study", Clin. Orthop.; 304: 176-183 (July, 1994)
/P.P./	OF	MUNDINGER, et al.	"Magnetic Resonance Tomography In The Diagnosis Of Peripheral Joints", Schweiz Med. Wochenschr. 121(15): 517- 527 (1991)
/P.P./	OG	MYERS, S.L., et al.	"Experimental Assessment by High Frequency Ultrasound of Articular Cartilage Thickness and Osteoarthritic Changes", J. Rheumatol; 22: 109-116 (1995)
/P.P./	ОН	NIEMINEN, et al.	"T2 Indicates Incompletely the Biomechanical Status of Enzymatically Degraded Articular Cartilage of 9.4T", Seventh Scientific Meeting of ISMRM, p. 551 (1999)
/P.P./	OI	NISHII, et al.	"Three Dimensional Evaluation Of The Acetabular And Femoral Articular Cartilage In The Ostcoarthritis Of The Hip Joint", Seventh Scientific Meeting of ISMRM, p. 1030 (1999)

Lang, et al.

Attorney Docket:

2960/112

Serial No:

10/681,749

Art Group Unit:

3733

Date Filed:

October 7, 2003

Examiner Name:

Philogene, P.

Invention:

Minimally Invasive Joint Implant with 3-Dimensional Geometry Matching

/P.P./	OJ	NIZARD, R.S.	"Role Of Tibial Osteotomy In The Treatment Of Medial Femorotibial Osteoarthritis", Rev. Rhum. Engl. Ed. 65 (7-9): 443-446 (1998)
/P.P./	OK	NOLL, et al.	"Homodyne Detection In Magnetic Resonance Imaging", IEEE Trans. Med. Imag. 10(2): 154-163 (1991)
/P.P./	OL	OGILVIE-HARRIS, et al.	"Arthroscopic Management Of The Degenerative Knee", Arthroscopy 7: 151-157 (1991) T. 144, V. IV
/P.P./	ОМ	PARKKINEN, et al.	"A mechanical apparatus with microprocessor controlled stress profile for cyclic compression of cultured articular cartilage explants", J. Biomech.; 22 (11-12): 1285-91 (1989)
/P.P./	ON	PEARLE, et al.	"Use Of An External MR-Tracking Coil For Active Scan Plane Registration During Dynamic Musculoskeletal MR Imaging In A Vertically Open MR Unit", Am. Roentgen Ray Soc., San Fran., CA (1998)
/P.P./	00	PETERFY, C.G., et al.	"Emerging Applications of Magnetic Resonance Imaging in the Evaluation of Articular Cartilage", Radiol Clin North Am.; 195-213 (Mar., 1996)
/P.P./	OP	PETERFY, et al.	"MR Imaging Of The Arthritic Knee: Improved Discrimination Of Cartilage, Synovium, And Effusion With Pulsed Saturation Transfer And Fat-Suppressed Ti-Weighted Sequences", Radiology 191(2): 413-419 (1994)
/P.P./	OQ	PETERFY, et al.	"Quantification Of The Volume Of Articular Cartilage In The Carpophalangeal Joints Of The Hand: Accuracy And Precision Of Three-Dimensional MR Imaging", AJR 165: 371-375 (1995)
/P.P./	OR	PETERFY, et al.	"Quantification Of Articular Cartilage In The Knee With Pulsed Saturation Transfer Subtraction And Fat-Suppresssed MR Imaging: Optimization And Validation", Radiology 192(2): 485-491 (1994)
/P.P./	os	PILCH, et al.	"Assessment Of Cartilage Volume In The Femorotibial Joint With Magnetic Resonance Imaging And 3D Computer Reconstruction", J. Rheumatol. 21(12): 2307-2321 (1994)
/P.P./	ОТ	PIPLANI, et al.	"Articular Cartilage Volume In The Knee: Semiautomated Determination From Three-Dimensional Reformations Of MR Images", Radiology 198: 855-859 (1996)
/P.P./	OU	POTTER, et al.	"Magnetic Resonance Imaging Of Articular Cartilage In The Knee: An Evaluation With Use Of Fast-Spin-Echo Imaging", J. Bone Joint Surg. 80-A(9): 1276-1284 (1998)
/P.P./	ov	POTTER, et al.	"Sensitivity of Quantitative NMR Imaging to Matrix Composition in Engineered Cartilage Tissue" Seventh Scientific Meeting of ISMRM, p. 552 (1999)
/P.P./	ow		"Technique For Measuring The Area Of Canine Articular Surfaces", Am. J. Vet. Res. 48(4): 608-609 (1987)
/P.P./	OX	PRODROMOS, et al.	"A Relationship Between Gait And Clinical Changes Following High Tibial Osteotomy", J. Bone Joint Sur. 67A: 1188-1194 (1985)

Lang, et al.

Attorney Docket:

2960/112

Serial No:

10/681,749

Art Group Unit:

3733

Date Filed:

October 7, 2003

Examiner Name:

Philogene, P.

Invention:

Minimally Invasive Joint Implant with 3-Dimensional Geometry Matching

P.P./	OY	RADIN, et al.	"Characteristics of Joint Loading As It Applies To Osteoarthrosis" in: Mow VC, Woo S.Y., Ratcliffe T., eds. Symposium on Biomechanics of Diarthrodial Joints, Vol. 2, New York, NY: Springer-Verlag 437-451 (1990)
/P.P./	oz	RADIN, et al.	"Mechanical Determination of Osteoarthrosis", Sem. Arthr. Rheum. 21(3): 12-21 (1991)
/P.P./	PA	RECHT, et al.	"Accuracy Of Fat-Suppressed Three-Dimensional Spoiled Gradient-Echo FLASH MR Imaging In The Detection Of Patellofemoral Articular Cartilage Abnormalities", Radiology 198: 209-212 (1996)
/P,P./	PB	RECHT, et al.	"MR Imaging Of Articular Cartilage: Current Status And Future Directions" AJR 163: 283-290 (1994)
/P.P./	PC	REISER, et al.	"Magnetic Resonance In Cartilaginous Lesions Of The Knee Joint With Three-Dimensional Gradient-Echo Imaging", Skeletal Radiol. 17(7): 465-471 (1988)
/P.P./	PD	RITTER, et al.	"Postoperative Alignment Of Total Knee Replacement", Clin. Orthop. 299: 153-156 (1994)
	***************************************	00000000000000000000000000000000000000	management of the state of the
/P.P./ /P.P./	PF	ROBSON, et al.	"A Combined Analysis And Magnetic Resonance Imaging Technique For Computerized Automatic Measurement Of Cartilage Thickness In Distal Interphalangeal Joint", Magnetic Resonance Imaging 13(5): 709-618 (1995)
/P.P./	PG	RUSHFELDT, P.D., et al.	"Improved Techniques for Measuring In Vitro the Geometry and Pressure Distribution in the Human Acetabulum – 1. Ultrasonic Measurement of Acetabular Surfaces, Sphericity and Cartilage Thickness", J. Biomech; 14(4): 253-260 (1981)
/P.P./	PH	SAIED, A., et al.	"Assessment of Articular Cartilage and Subchondral Bone: Subtle and Progressive Changes in Experimental Osteoarthritis Using 50 MHz Echography In Vitro", J. Bone Miner Res.; 12(9): 1378-1386 (1997)
/P.P./	PI	SAITO, et al.	"New Algorthms For Euclidean Distance Transformation Of An N-Dimensional Digitized Picture With Applications", Pattern Recognition 27(11): 1551-1565
/P.P./	PJ	SCHIPPLEIN, et al.	"Interaction Between Active And Passive Knee Stabilizer During Level Walking", J. Orthop Res. 9:113-119 (1991)
/P.P./	PK	SCHOUTEN, et al.	"A 12 Year Follow Up Study In The General Population On Prognostic Factors Of Cartilage Loss In Osteoarthritis Of The Knee", Ann Rheum Dis 51:932-937 (1992)
/P.P./	PL	SHAPIRO, et al.	"In-Vivo Evaluation of Human Cartilage Compression and Recovery Using 1H and 23Na MRI", Seventh Scientific Meeting of ISMRM, p. 548 (1999)
/P.P./	PM	1 SHARIF, et al.	"Serum Hyaluronic Acid Level As A Predictor Of Disease Progression In Osteoarthritis Of The Knee", Arthritis Rheum 38: 760-767 (1995)

Applicants: Lang, et al. Attorney Docket: 2960/112

Serial No: 10/681,749 Art Group Unit: 3733

Date Filed: October 7, 2003 Examiner Name: Philogene, P.

Invention: Minimally Invasive Joint Implant with 3-Dimensional Geometry Matching

/P.P./	PN	SHARMA, et al.	"Knee Adduction Moment, Serum Byaluronic Acid Level, And Disease Severity In Medial Tibiofemoral Ostcoarthritis", Arthritis and Rheumatism 41(7): 1233-40 (1998)
/P.P./	РО	SHOUP, et al.	"The Driven Equilibrium Fourier Transform NMR Technique: An Experimental Study", J. Mag. Res. P. 8 (1972)
/P.P./	PP	SLEMENDA, et al.	"Lower Extremity Lean Tissue Mass And Strength Predict Increases In Pain And In Functional Impairment In Knee Osteoarthritis", Arthritis Rheum 39(suppl): S212 (1996)
/P.P./	PQ	SLEMENDA, et al.	"Lower Extremity Strength, Lean Tissue Mass And Bone Density In Progression Of Knee Osteoarthritis", Arthritis Rheum 39(suppl.): S169 (1996)
/P.P./	PR	SOLLOWAY, et al.	"The Use Of Active Shape Models For Making Thickness Measurements Of Articular Cartilage From MR Images", Magn. Reson. Med.; 37(6): 943-52 (June, 1997)
/P.P./	PS	SOSLOWSKY, et al.	"Articular Geometry of the Glenohumeral Joint", Clin. Orthop.; 285: 181-190 (Dec., 1992)
/P.P./	PT	SPOOR, et al.	"Rigid Body Motion Calculated from Spatial Coordinates of Markers", J. Biomechanics 13: 391-393 (1980)
/P.P./	PU	STAMMBERGER, et al.	"A Method For Quantifying Time Dependent Changes In MR Signal Intensity Of Artivular Cartilage As A Function Of Tissue Deformation In Intact Joints" Medical Engineering & Physics 20: 741-749 (1998)
/P.P./	PV	STAMMBERGER, et al.	"A New Method for 3D Cartilage Thickness Measurement with MRI, Based on Euclidean Distance Transformation, and its Reproducibility in the Living", Sixth Scientific Meeting of ISMRM, p. 562 (1998)
/P.P./	PW	STAMMERGER, et al.	"Determination Of 3D Cartilage Thickness Data From MR Imaging: Computational Method And Reproducibility In The Living", Mag. Res. Med. 41: 529-536 (1999)
/P.P./	PX	STAMMBERGER, et al.	"Elastic Registration Of 3D Cartilage Surfaces From MR Image Data For Detecting Local Changes Of The Cartilage Thickness", Magnetic Resonance in Medicine 44: 592-601 (2000)
/P.P./	PY	STAMMBERGER, et al.	"Interobserver Reproducibility Of Quantitative Cartilage Measurements: Comparison Of B-Spline Snakes And Manual Segmentation", Mag. Res. Imaging 17: 1033-1042 (1999)
/P.P./	PZ	STEINES, et al.	"Measuring Volume Of Articular Cartilage Defects In Osteoarthritis Using MRI", Arthritis Rheum. 43(Suppl. 9): S340 (2000)
/P.P./	QA	STEINES, et al.	"Segmentation Of Osteoarthritis Femoral Cartilage From MR Images", CARS – Computer-Assisted Radiology and Surgery, pp. 578-583, San Francisco (2000)

Lang, et al.

Attorney Docket:

2960/112

Serial No:

10/681,749

Art Group Unit:

3733

Date Filed:

October 7, 2003

Examiner Name:

Philogene, P.

Invention:

Minimally Invasive Joint Implant with 3-Dimensional Geometry Matching

/P.P./	QB	STEINES, D., et al.	"Segmentation Of Osteoarthritic Femoral Cartilage Using Live Wire", ISMRM Eight Scientific Meeting Denver, Colorado (2000)
/P.P./	QC	STEVENSON, et al.	"The Fate Of Articular Cartilage After Transplantation Of Fresh And Cryopreserved Tissue-Antigen-Matched And Mismatched Osteochondral Allografts In Dogs", J. Bone Joint Surg. 71(9): 1297 – 1307 (1989)
/P.P./	QD	TEBBEN, et al.	"Three-Dimensional Computerized Reconstruction. Illustration Of Incremental Articula Cartilage Thinning", Invest. Radiol. 32(8): 475-484 (1997)
/P.P./	QE	TIESCHKY, et al.	"Repeatability Of Patellar Cartilage Thickness Patterns In The Living, Using A Fat-Suppressed Magnetic Resonance Imaging Sequence With Short Acquisition Time And Three-Dimensional Data Processing", J. Orthop. Res. 15(6): 808-813 (1997)
/P.P./	QF	TOMASI, et al.	"Shape And Motion From Image Streams Under Orthography—A Factorization Method", Proc. Nat. Acad. Sci. 90(21): 9795-9802 (1993)
/P.P./	QG	TSAI, et al.	"Application Of A Flexible Loop-Gap Resonator For MR Imaging Of Articular Cartilage At 3.TO", International Society for Magnetic Resonance in Medicine, Denver, 4/18/00-4/24/00 (2000)
/P.P./	QH	TYLER, et al.	"Detection And Monitoring Of Progressive Degeneration Of Osteoarthritic Cartilage By MRI", Acta Orthop Scand; 66 Suppl. 266: 130-138 (1995)
/P.P./	QI	VAN LEERSUM, et al.	"Thickness Of Patellofemoral Articular Cartilage As Measured On MR Imaging: Sequence Comparison Of Accuracy, Reproducibility, And Interobserver Variation", Skeletal Radiol; 24: 431-435 (1995)
/P.P./	QJ	VANDE BERG, et al.	"Assessment Of Knee Ceartilage In Cadavers With Dual- Detector Spiral CT Arthrography And MR Imaging", Radiology, 222(2): 430-436 (Feb., 2002)
/P.P./	QK	VANDERLINDEN, et al.	"MR Imaging Of Hyaline Cartilage At 0.5 T: A Quantitative And Qualitative In Vitro Evaluation Of Three Types Of Sequences", June 1998 T. 196, V. V
/P.P./	QL	VELYVIS, et al.	"Evaluation of Articular Cartilage with Delayed Gd(DTPA)2-Enhanced MRI: Promise and Pitfalls", Seventh Scientific Meeting of ISMRM, p. 554 (1999)
/P.P./	QM	WANG, et al.	"The Influence Of Walking Mechanics And Time On The Results Of Proximal Tibial Osteotomy", J. Bone Joint Surg. 72A: 905-909 (1990)
/P.P./	QN	WARFIELD, et al.	"Automatic Segmentation of MRI of the Knee", ISMRM Sixth Scientific Meeting and Exhibiton p. 56324, Sydney, Australia (Apr. 18-24, 1998)
/P.P./	QO	WARFIELD, et al.	"Adaptive Template Moderated Spatially Varying Statistical Classification". Proc. First International Conference on Medical Image Computing and Computer Assisted, MICCAI, pp. 231-238 (1998)

Lang, et al.

Attorney Docket:

2960/112

Serial No:

10/681,749

Art Group Unit:

3733

Date Filed:

October 7, 2003

Examiner Name:

Philogene, P.

Invention:

Minimally Invasive Joint Implant with 3-Dimensional Geometry Matching

/P.P./	QP	WARFIELD, et al.	"Adaptive, Template Moderated Spatially Varying Statistical Classification", Medical Image Analysis 4(1): 43-55 (2000)
/P.P./	QQ	WATERTON, et al.	"Diurnal Variation In The Femoral Articular Cartilage Of The Knee In Young Adult Humans", Mag. Res. Med. 43: 126-132 (2000)
/P.P./	QR	WATERTON, et al.	"Magnetic Resonance Methods for Measurement of Disease Progression in Rheumatoid Arthritis", Magn. Reson. Imaging: 11: 1033-1038 (1993)
/P.P./	QS	WATSON, et al.	"MR Protocols for Imaging the Guinea Pig Knee", Magn Reson Imaging; 15(8): 957-970 (1997)
/P.P./	QT	WAYNE, et al.	"Measurement Of Articular Cartilage Thickness In The Articulated Knee", ANN Biomed Eng.; 26(1): 96-102 (JanFeb., 1998)
/P.P./	QU	WAYNE, et al.	"Finite Element Analyses of Repaired Articular Surfaces", Proc. Instn. Mech. Eng.; 205(3): 155-162 (1991)
/P.P./	QV	WOOLF, et al.	"Magnetization Transfer Contrast: MR Imaging Of The Knee", Radiology 179: 623-628 (1991)
/P.P./	QW	WORRING, et al.	"Digital Curvature Estimation CVGIP", Image Understanding 58(3): p. 366-382 (1993)
/P.P./	QX	YAN, C.H.	"Measuring Changes In Local Volumetric Bone Density", New approaches to quantitative computed tomography, Ph.D. Thesis, Dept. of Electrical Engineering, Stanford University (1998)
/P.P./	QY	YAO, et al.	"Incidental Magnetization Transfer Contrast In Fast Spin-Echo Imaging Of Cartilage", J. Magn. Reson. Imaging 6(1): 180-184 (1996)
/P.P./	QZ	YAO, et al.	"MR Imaging Of Joints: Analytic Optimization Of GRE Techniques At 1.5T", AJR 158(2): 339-345 (1992)
/P.P./	RA	YASUDA, et al.	"A 10 To 15 Year Follow Up Observation Of High Tibial Osteotomy In Medial Compartment Osteoarthritis", Clin. Orthop. 282: 186-195 (1992)
/P.P./	RB	International Search Report	International Search Report, dated July 13, 2006

Examiner Signature:	/Pedro Philogene/
Date Considered:	02/23/2010
EXAMINER: Initial if line through citation if communication to appl	reference considered, whether or not citation is in conformance with MPEP 609; draw not in conformance and not considered. Include copy of this form with next icant.

## Section 6. Copies of Listed Information Items Accompanying This Statement

NOTE: 37 C.F.R. section 1.98(a)(2) requires that any information disclosure statement filed under section 1.97 shall include: "A legible copy of: (1) Each U.S. and foreign patent; (ii) Each publication or that portion which caused it to be listed; and (iii) All other information or that portion which caused it to be listed, except that no copy of a U.S. patent application need be included..."

NOTE: The wording in section 1.98(a)(2)(iii) makes it clear that the requirement to submit a copy of each item of information listed in an information disclosure statement does not apply to the citation of a U.S. patent application. Notice of January 9, 1992, 1135 O.G. 13-25, at 14.

Legible copies of all items listed in Forms PTO/SB/08A and 08B (substitute for Form PTO-1449) accompany this information statement.

(complete the following, if applicable)

[x ]Exception(s) to above:

U.S. patent citations are not included pursuant to the United State Patent and Trademarks Office's September 21, 2004 waiver of the copy requirement in 37 CFR 1.98 for cited pending U.S. patent citations when the patent citations are available in the USPTO's IFW system.

[	]ltems	in	prior	application	on, fro	n which	n an	earlier	filing	date	is	claimed	for	this	application	n, as
id	entified	l in	Secti	on 4.												

[ ]Cumulative patents or publications identified in Section 5.

Section 7A. Concise Explanation of Non-English Language Listed Information Items in EPO Search Report
The relevance with respect to the following citations listed on Forms PTO/SB/08A and 08B (substitute for PTO-1449):
is submitted on the basis of the accompanying:
(check the appropriate item)
[x] International Search Reports that is in the English language,
[ ] International Search Report that is not in the English language and that is accompanied also by a English language version of the EPO search report, that issued on the corresponding European pater application.

# Section 10. Identification of Person(s) Making This Supplemental Information Disclosure Statement

The person making this certification is	
(check e	ach applicable item)
(a) [ ]the inventor(s) who signs below	
	SIGNATURE OF INVENTOR
	(type name of inventor who is signing)
(b) [ ]an individual associated with the f	filing and prosecution of this application (37 C.F.R. section
	SIGNATURE OF INVENTOR
	(type name of inventor who is signing)
(c) [x] the practitioner who signs below (	on the basis of the information:
(check e	each applicable item)
[ ] supplied by the inventor	(s).
	idual associated with the filing and prosecution of this 7 C.F.R. section 1.56(c)).
[x] in the practitioner's file.	
	An
Reg. No.: <u>47,953</u>	SIGNÁTURE OF PRACTITIONER
	Alexander J. Smolenski, Jr., Esq. (type or print name of practitioner)
Tel. No.: (617) 443-9292	125 Summer Street, 11 <sup>th</sup> Floor P.O. Address
Customer No.: 002101	Boston, MA 02110-1618
02960/00112 559620.1	